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2. ADDA	H	2.23
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REMARKS DDA 80-0394 Subj: RFP of SAFE Terminals

2. to 3.

I have tentatively set up an appointment for you, Terry and Bob to meet with me on the attached memorandum for 1330, Thursday, 26 February. Please confirm that you can attend and feel free to bring anyone you would like to have attend. The meeting will be in my office.

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FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Information Handling Systems Architect	7C18 Hqs.
	Phone No.

5041-102

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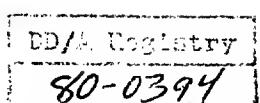FPMR (41 CFR) 101-11.206

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Att: Memorandum to ADDA from IHSA dtd 20 Feb 81
     Subj: RFP for SAFE Terminals

NOTE FOR: William N. Hart
Associate Deputy Director of Administration

25X1 FROM:

Information Handling Systems Architect

Bill

   1. Talking with Terry recently, I learned that the RFP for the
SAFE terminals may go out shortly. I am concerned. There are a
number of serious questions that I have about the Delta Data 7260
that lead me to wonder whether we are ready to make this long-term,
expensive commitment.

   Although the terminal concept appears to be right-on with
respect to our needs, the development seems to require a far greater
investment than was anticipated and duplicates mature technology now
emerging in the private sector. The imminent SAFE procurement   .
appears to lock us in to a specific terminal, a unique terminal
protocol, and a unique allocation of functions between host systems
and terminals for probably the next 10 years or so. This uniqueness
appears to me to commit the Agency to the development of all the
needed terminal functions. I am concerned that that is a far bigger
investment than we anticipated and of doubtful affordability. Even
if we could afford it, the current status and recent history
indicate that we are likely to end up having an all-up capability
much later than we would using commercially available equipment,
modified to fit our environment.

   2. The 7260 is a two-sided, flexible configuration system,
with a mother board that can accept additional cards to perform a
variety of functions. It is thus expandable to perform a wide   .
variety of processing and interface functions.

   The version to go into BLOCK I of the SAFE (234 terminals)
seems to be a "bare bones" version. As such, it is relatively
economical—slightly less than $6K per unit, excluding RDT&E. While
this cost looks quite attractive relative to the functions it
provides, it is balanced by the rather high price of add-ons that
are almost certain to be procured, e.g., $6K for a dual floppies
system needed to support most independent processing operations. I
suspect that an all-up 7260 is likely to gross out at about $20K,
and extensive use of a retrofitting approach would increase that.

3. Specific questions that I have include the following:

- A unique OS was developed for the terminal, rather than applying a standard microcomputer OS like CP/M. The result is that the great community of applications packages and languages hosted by such a common OS--including word processing (WP), graphics, and compiled HOLs like COBOL, FORTRAN, and PASCAL--cannot be applied. We have to develop any such packages users want, as well as application packages such as statistical analysis and linear programming packages.

- A unique form of BASIC has been developed for the 7260. It has some special primitives that are attractive for our environment, but has been described by one trial user as "arcane." It appears to me that we are unnecessarily committing ourselves to the support of a language.

- Although graphic symbols and pictures are included, a graphics capability will not be immediately provided. I question very strongly fielding a smart terminal that does not have a graphics capability. A position that such a capability can be added later, if needed, seems very risky to me, and again commits us to expensive, unique in-house developments duplicating what is commonly available in the commercial arena. From what I can see, a graphics capability is needed now and should be in the initial version of any procured terminal. (The fact that users may not have stressed such a capability two years ago is irrelevant. NPIC, for one, needs a graphics capability now. I suspect NFAC does also.)

- Of the 64K of core memory on the processing side, all but 12K has been consumed by operational software. Since 12K is quite limited, and generally inadequate, there is talk about adding another 128K to the processing side. This would involve further RD&E investment for a new card, however, and modifications to the OS, of unknown scope.

- It was required that the 7260 emulate the DD 5000 in hardware. I don't know how readily modifiable this is, but it seems to me a modifiable emulation is needed. This would permit us to modify protocol to another standard in the future, should we wish, avoiding having to write off the terminals prematurely because of a system reconfiguration.

4. In thinking about alternatives and the realities of our environment --like meeting our terminal GFE Schedule to [   ] on SAFE--there are a number of factors to consider. I believe that:

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- The immediate terminal application will be for WP, much
  of it not under SAFE, and analyst file manipulations,
  both under VM and SAFE with its SUE. A processing
  capability is not needed in the Block I SAFE.

- There is a need within the near term for both BASIC
  programming support and graphics. These two functions
  require a full system capability, i.e., a special card
  and dual floppies.

- The technology trend in large organizations is to provide
  distributed processing. I think that need can be met
  over the next five to ten years with a smart terminal
  configured to support compiled HOL processing, graphics,
  and numerous standard applications packages. If we do
  not meet the distributed processing need with smart
  terminal processors, I fear we will be forced into much
  more expensive and managerially difficult solutions
  involving distributed minis.

The consequence of these factors is that a mix of terminal
capabilities is a feasible and more economical solution than buying
all in the most complete configuration needed. The flexible
approach is the SAFE plan, with some level of currently unplanned
retrofitting to develop the needed, more sophisticated capabilities.
The terminals could all be from one source, as planned by SAFE, or
from more than one, as long as they are functionally compatible
(including protocol). The only problem associated with different
sources of terminals that I see is duplication investment in
functionalities and protocols to fit our environment. I do not
believe that these are likely to be significant as compared to the
benefit of being able to piggy-back available technology, as long as
these are only a limited number of different sources.

Bob

Bob

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